Cypress Semiconductor
Package Qualification Report

QTP# 040802 VERSION 1.0
March 2004

32-lead SOJ Package using NITTO MP8500YFT86
Mold Compound and Ni/Pd/Au Leadframe
MSL3, 220C Solder Reflow Peak (No PMC)
Cypress Philippines (CML-R)

CYPRESS TECHNICAL CONTACT FOR QUALIFICATION DATA:

Rene Rodgers
Principal Reliability Engineer
(408) 943-2732

PACKAGE QUALIFICATION HISTORY

QUAL REPORT	DESCRIPTION OF QUALIFICATION PURPOSE	DATE COMP.
040802	32-lead (300mil) SOJ package using NITTO MP-8500YFT86 Mold Compound, Ni/Pd /Au Leadframe, @ 220C Solder Reflow Peak (No PMC), MSL3, CML-R , Conventional	Feb 04

MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION	
Package Designation:	V32
Package Outline, Type, or Name:	32- Plastic Small Outline J-Bend Package (SOJ)
Mold Compound Name/Manufacturer:	NITTO MP-8500YFT86
Mold Compound Flammability Rating:	UL-94V(0)
Oxygen Rating Index:	N/A
Lead Frame Material:	Copper based, Ni Pd Au Plating, Reduced Metal Pad
Lead Finish, Composition / Thickness:	0.8u” Ni/Pd /Au from Jade
Die Backside Preparation Method/Metallization:	N/A
Die Separation Method:	100%
Die Attach Supplier:	Dexter
Die Attach Material:	QMI 509
Die Attach Method:	Dispensing
Bond Diagram Designation	10-02612
Wire Bond Method:	Thermosonic
Wire Material/Size:	Gold, 1.0mil
Thermal Resistance Theta JA °C/W:	63.74 °C/W
Package Cross Section Yes/No:	N/A
Assembly Process Flow:	11-20002
Name/Location of Assembly (prime) facility:	Cypress Philippines (CML-R)

ELECTRICAL TEST / FINISH DESCRIPTION	
Test Location:	Cypress Philippines (CML-R)
Fault Coverage:	100%

Note: Please contact a Cypress Representative for other packages availability

RELIABILITY TESTS PERFORMED PER SPECIFICATION REQUIREMENTS

Stress/Test	Test Condition (Temp/Bias)	Result P/F
Temperature Cycle	MIL-STD-883C, Method 1010, Condition C, -65°C to 150°C Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs., 30°C/60%RH+3IR-Reflow, 220°C+5, -0°C	P
Pressure Cooker	121°C, 100%RH Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH+3IR-Reflow, 220°C+5, 0°C	P
High Accelerated Saturation Test (HAST)	130°C, 3.63V, 85%RH Precondition: JESD22 Moisture Sensitivity MSL 3 192 Hrs, 30C/60%RH+3IR-Reflow, 220°C+5, 0°C	P
Adhesion of Lead Finish	Cypress Spec 25-00029	P
Ball Shear	Cypress Spec 12-00292	P
Bond Pull	Cypress Spec 24-00002	P
External Visual	Cypress Spec 12-00292	P
Physical Dimensions	Cypress Spec. 25-00031	P
X-Ray	MIL-STD-883C, Method 2012, Cypress Spec 12-00292	P
Solderability	Cypress Spec. 25-00018	P
Acoustic Microscopy, MSL 3	Cypress Spec. 25-00104	P

Reliability Test Data

QTP #: 040802

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: ACOUSTIC - MICROSCOPE, MSL3							
CY7C188 (7C188B)	2120439	*610342921*	CML-R	COMP	15	0	
CY7C188 (7C188B)	2120439	*610342921M*	CML-R	COMP	15	0	
CY7C188 (7C188B)	2120439	*610342921M1*	CML-R	COMP	15	0	
STRESS: ADHESION OF LEAD FINISH							
CY7C188 (7C188B)	2120439	*610342921*	CML-R	COMP	3	0	
CY7C188 (7C188B)	2120439	*610342921*	CML-R	COMP	3	0	
STRESS: BOND PULL							
CY7C188 (7C188B)	2120439	*610342921*	CML-R	COMP	10	0	
STRESS: PHYSICAL DIMENSIONS							
CY7C188 (7C188B)	2120439	*610342921*	CML-R	COMP	5	0	
STRESS: EXTRNAL VISUAL							
CY7C188 (7C188B)	2120439	*610342921*	CML-R	COMP	15	0	
CY7C188 (7C188B)	2120439	*610342921M*	CML-R	COMP	15	0	
STRESS: HI-ACCEL SATURATION TEST. 130C, 3.63V, 85%RH, , PRE COND 192 HR 30C/60%RH, MSL3							
CY7C188 (7C188B)	2120439	*610342921*	CML-R	128	15	0	
STRESS: PRESSURE COOKER TEST, 121C, 100%RH, PRE COND 192 HR 30C/60%RH, MSL3							
CY7C188 (7C188B)	2120439	*610342921*	CML-R	168	15	0	
STRESS: TC COND. C -65C TO 150C, , PRE COND 192 HR 30C/60%RH, MSL3							
CY7C188 (7C188B)	2120439	*610342921*	CML-R	300	45	0	
CY7C188 (7C188B)	2120439	*610342921*	CML-R	500	45	0	
CY7C188 (7C188B)	2120439	*610342921*	CML-R	1000	44	0	
CY7C188 (7C188B)	2120439	*610342921M*	CML-R	300	42	0	
CY7C188 (7C188B)	2120439	*610342921M*	CML-R	500	42	0	
CY7C188 (7C188B)	2120439	*610342921M*	CML-R	1000	42	0	
CY7C188 (7C188B)	2120439	*610342921M1*	CML-R	300	43	0	
CY7C188 (7C188B)	2120439	*610342921M1*	CML-R	500	43	0	
CY7C188 (7C188B)	2120439	*610342921M1*	CML-R	1000	42	0	

Reliability Test Data

QTP #: 040802

Device	Fab Lot #	Assy Lot #	Assy Loc	Duration	Samp	Rej	Failure Mechanism
STRESS: SOLDERABILITY							
CY7C188 (7C188B)	2120439	*610342921*	CML-R	COMP	3	0	
CY7C188 (7C188B)	2120439	*610342921M*	CML-R	COMP	3	0	
STRESS: X-RAY							
CY7C188 (7C188B)	2120439	*610342921*	CML-R	COMP	15	0	